the Bureau identified in its Designation Order. Our EIC Tariff provisions should be sustained.

Respectfully submitted,

U S WEST COMMUNICATIONS, INC.

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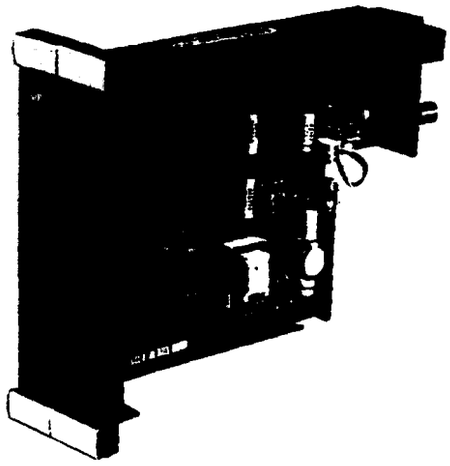
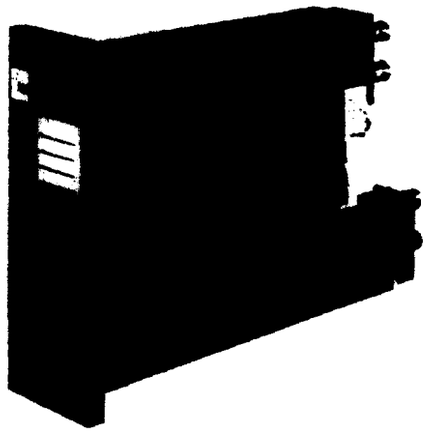
September 30, 1993

ATTACHMENT A

DS3 Office Repeaters



T4473-10



T4473-20

Description:
The DS3 Single Office Repeater consists of a printed circuit board module containing a single DS-3 regenerator. The DS3 Dual Office Repeater consists of two printed circuit boards, each containing a single DS-3 regenerator, attached to a front panel. Depending on the mode of operation, the dual repeater may be used in either a bidirectional or unidirectional arrangement.

The repeater plug-in modules consist of two basic circuit blocks, one containing the single regenerator and the other the power supply. When the module is installed, a 1 amp fuse, a Loss of Signal Alarm LED and a Power Alarm LED are visible from the front panel. The power alarm is extended to a set of normally open and normally closed contacts, accessible via screw terminals at the rear of the mounting shelf.

Each repeater has two internal DC/DC converter power supplies which provide redundancy for reliability.

Application:
The office repeater is used to provide cross-connection of DS-3 signals between two DSX-3 points separated by more than the standard 27' limit. They are also used when DS-3 equipment is located more than 450' from the DSX-3 bay. The single repeater input range allows it to be located up to 1200' from the DSX-3 bay; the dual repeater input range allows it to be located up to 550' from the DSX-3 bay. The repeater output can be optioned to permit it to be located up to 550' from the DSX-3 bay.

The switch inserted artificial lines, in steps of 0' to 225', 225' to 450' or 450' to 550', allow for maximum flexibility in the placement of the repeater and its associated equipment. The repeaters are compatible with Bell DSX specification (CB 119).

For detailed information, see the Application Section, pages 29-33.

Ordering Information

Description	Dimensions (Height, Width, Depth)	Catalog Number
DS3 Dual Office Repeater	6 x 2.12 x 9 inches (15.24 x 5.38 x 22.86 cm)	T4473-20A
DS3 Single Office Repeater	6 x 2.12 x 9 inches (15.24 x 5.38 x 22.86 cm)	T4473-10
Universal DS3 mounting shelf; 2" recess mounting.* Accepts T4473-10, T4473-20 repeaters, as well as DSX-4M rear cross-connect modules. **Holds 8 single or dual DS-3 repeaters, 5 DS3 BORs.** Features rear terminal block for connecting two (A and B) -48 Vdc battery and ground supplies, plus major and minor alarm NO, NC and C terminals for local alarm surveillance equipment.	6 x 19 or 23 x 12 inches (15.24 x 48.26 or 58.42 x 30.48 cm)	M4473-200-20

*For flush mounting, order M4473-200-00 (not stocked)

DSX Introduction

The second concern is the need to plan for future growth in the DSX-3 area. To avoid repeating the problems of cable congestion and lack of space for bay lineups, ADC can provide extensive documentation for the cross-connect area that includes recommendations on how to plan equipment lineups. These recommendations could include such issues as how to space bays to accommodate future growth, cable and wiring sizes and options and their appropriate selection and cable management techniques that provide improvements to existing situations.

ADC also offers on-site training when high turnover of personnel interferes with the planning process. If consulting is needed on a specific topic, we offer the assistance of qualified, experienced application engineers, strategically located in ADC's district offices throughout the country. In addition, ADC can provide documentation and procedures to manage the DSX-3 area, such as recommended procedure for proper field cable termination.

Increased Density Requirements

Products must provide higher density as the number of DS-3 circuits in telecommunications networks continues to grow. This need for greater density is driven by the shortage of office space, a desire to maximize new and existing lineups and maintenance of the DSX-3 template condition.

The accelerated growth of DS-3 service has forced DSX-3 products to evolve as well. Initial installations of 12 termination DSX-3 modules may no longer be adequate for certain applications. ADC has developed 16, 18, 20 and 24 termination DSX-3 panels to accommodate the need for increased density. To complement the cross-connect terminations, cabling has followed a similar evolution from the larger 728-type cables to the smaller RG59/734A/735A-type cables and other miniature cable designs. These issues are critical in handling the expansion of the original requirement for only three to five bays to the current requirement for three rows of nine bays each.

Along with the drive toward higher density DSX-3 is an increased need for ancillary products. As the cross-connect area grows, additional uses are encountered. How do you go cross-aisle? What about a bay for maintenance? How do you communicate? How is intraoffice lineup patching performed?

ADC has responded to these questions by designing products to make the cross-connect area as functional as possible. The ADC Cross Aisle Panel provides a convenient way to connect jumpers from one bay lineup to another on the opposite side of the aisle. A maintenance bay can be configured with the appropriate ADC equipment to provide a total system for solving DS-3 maintenance problems, including termination and cross-connect panels, interbay modules, jackfields and repeaters. The ADC Communications Panel provides a telephone facility that can be used at any relay rack located within a telephone office, originating and answering telephone calls between locations to coordinate maintenance activities. ADC's higher density cross-connect cords are reconfiguration possible.

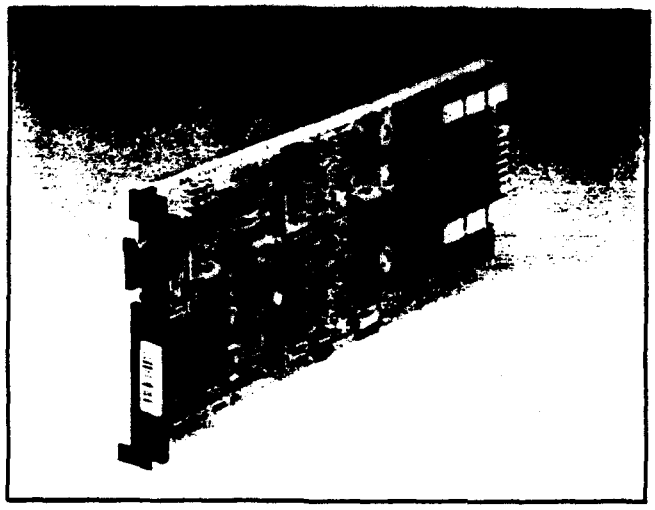
Network Enhancements

As DSX-3 cross-connect systems continue to grow, the limits of the cross-connect and IN/OUT cable losses are being reached. At this point, the integrity of the DSX-3 template is at risk, placing the system in jeopardy. In DSX-3 lineups where the standard 27' cross-connect distance is exceeded, regeneration of the signal is required to maintain the DSX-3 template.

ADC's full line of regenerative products manages both day-to-day DSX-3 issues as well as the unique needs of the larger DSX-3 systems. For day-to-day operation, ADC's full line of bridging office repeaters allows in-service reconfiguration of DS-3 service. The ability to perform in-service reconfiguration is necessary for rearranging facilities during equipment installation or maintenance and for "swinging" DS-3 service to the original facility during a major fiber cable cut after restoration of the cable has occurred. For large DSX-3

ADC Telecommunications

T1 Intraoffice Repeaters



T1544-00

Description:

The T1544-00 Dual Intraoffice Repeater has two regenerators per module, allowing it to be used as either one two-way repeater or two one-way repeaters. The design includes an on-board switching power supply which is powered from a standard −48 Vdc central office battery. Three switch selectable output equalization networks are also included in the design, providing an output range of up to 655'.

The T1544-01 Single Intraoffice Repeater has one regenerator per module and includes an on-board power supply allowing it to be powered by a −48 Vdc central office battery. This regenerator has an output range of up to 655'.

The repeater's compact design allows up to 1000 regenerators to be placed in each bay, saving floor and rack space. The modular design permits easy module replacement; if a circuit problem occurs, one module is simply unplugged and another inserted.

The repeaters are individually fused, providing quick service restoral. The fuse alarm LED gives easy visual indication of a blown fuse.

Automatic Line Build Out (ALBO) and output equalizers allow for flexibility in the location of the repeater bay. The input range is 0 to −27 dB; adjustable output equalizers allow the bay to be placed within 0 to 655' of the POI.

Application:

The T1544 series of intraoffice repeaters are used where patching or cross-connecting distances are over 85' or equipment separation distances exceed 655'. These repeaters regenerate any standard DS-1 (1.544 Mbps) signal and provide a standard DS-1 level signal at the DSX point of interface.

Ordering Information:

Description	Dimensions (Height, Width, Depth)	Catalog Number
Dual Intraoffice Repeater	3.7 x 9.0 inches (9.40 x 22.86 cm)	T1544-00
Single Intraoffice Repeater	1.7 x 9.0 inches (4.31 x 22.86 cm)	T1544-01
Accessories		
Maintenance Shelf; includes convenient drawer designed to hold spare fuses, repeaters, etc.; **2" height.**	2 x 23 x 11.5 inches (5.08 x 58.42 x 29.21 cm)	M1544-002
Maintenance Shelf; includes convenient drawer designed to hold spare fuses, repeaters, etc.; **4" height.**	4 x 23 x 11.5 inches (10.16 x 58.42 x 29.21 cm)	M1544-004
Test Card; extends leads from **M1544-252 Mounting Shelf** and provides test access points on front of shelf.	1.7 x 12.7 inches (4.32 x 32.26 cm)	X1544-02
Test Card; extends leads from **M1544-254 Mounting Shelf** and provides test access points on front of shelf.	3.7 x 12.7 inches (9.40 x 32.26 cm)	X1544-04

For information on mounting shelves, please see page 94.

CERTIFICATE OF SERVICE

I, Kelseau Powe, Jr., do hereby certify that on this 1st day of October, 1993, I have caused a copy of the foregoing **REQUEST FOR ACCEPTANCE OF LATE-FILED REBUTTAL** and **U S WEST COMMUNICATIONS, INC., REBUTTAL** to be served via first-class United States Mail, postage prepaid, upon the persons listed on the attached service list.

Kelseau Powe, Jr.

***Via Hand-Delivery**

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